REMARKS

Applicants have amended claims 1, 7, and 13 as set forth above. In view of the above amendments and the following remarks, reconsideration of the outstanding office action is respectfully requested.

The Office has rejected claims 1, 2, 4-8, 10-14 and 16-24 under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,606,718 to Bessios (Bessios) and claims 3, 9 and 15 under 35 U.S.C. 103(a) as being unpatentable over Bessios in view of US Patent No. 4,441,184 to Soneda et al (Soneda). The Office asserts that Bessios discloses bits are interleaved as shown in figure 3 and that the data bits have a separation of 11 bits. The Office also asserts Bessios discloses that the set of values are interleaved in accordance with an interleaving depth selected based on an error constraint ER and the IM-bit error correction capability to provide a predefined distance between adjacent elements (column 4, lines 3-18). Accordingly, the Office asserts the distance between bits in Bessios is adjustable and the distance is at least one. The Office also asserts that Bessios does not disclose interpolating the recovered data for errors, but asserts Soneda discloses an interpolation stage for compensating for uncorrectable erroneous data words in column 3, lines 13-20.

Neither Bessios nor Soneda, alone or in combination, disclose or suggest, "originally adjacent elements in the source sequence are separated by either a second number of elements in the interleaved sequence or the second number plus one, wherein the first number is adjustable and the second number is at least one" as recited in claims 1, 7, and 13. The Office has asserted the sequence shown in FIG. 3 has a distance of eleven, except when the sequence jumps from the end of the code to the beginning in which case the distance will be twelve. However, the Office's attention is respectfully directed to FIG. 3 in Bessios which clearly illustrates there is only a separation of two between "100" and "2" in the original sequence and also between "99" and "1". As a result, since in Bessios some of the originally adjacent elements in the interleaved sequence may only be separated by two, the loss of sequential packets in Bessios could result in the loss of a large amount of contiguous data.

Additionally, if in Bessios the Office is counting the distance or spacing between adjacent elements in the sequence in FIG. 3 as eleven before the sequence jumps from the end of the code to the beginning of the code, such as the distance between "1" and "12", then when the sequence jumps from the end of the code to the beginning the distance between: "90" and "3"; "91" and "4"; "92" and "5"; "93" and "6"; "94" and "7"; "95" and "8"; "96" and "9"; "97" and "10"; and "98" and "11" using the same counting system the

distance is thirteen, not twelve as asserted by the Office. Accordingly, the Bessios discloses separating the originally adjacent elements by second element, a second element plus two, and two, not by either a second number or a second number plus one. Like Bessios, Soneda does not disclose or suggest the claimed separation of the originally adjacent elements in the source sequence in the interleaved sequence.

As disclosed on page 6, line 23 to page 7, line 7 of the above-identified patent application, if the source sequence is not interleaved prior to transmission, then the loss of sequential packets would result in the loss of a large amount of contiguous data. With the present invention, the source sequence is interleaved prior to transmission in a manner so that the loss of sequential packets of data leads to smaller, dispersed errors which can be more easily masked. Accordingly, in view of the foregoing amendments and remarks, the Office is respectfully requested to reconsider and withdraw the rejection of claims 1, 7, and 13. Since claims 2-6, 19, and 22 depend from and contain the limitations of claim 1, claims 8-12, 20, and 23 depend from and contain the limitations of claim 7, and claims 14-18, 21, and 24 depend from and contain the limitations of claim 13, they are distinguishable over the cited references and are patentable in the same manner as claims 1, 7, and 13.

Additionally, neither Bessios nor Soneda, alone or in combination, disclose or suggest: "wherein the interleaving further comprises O(i) = S(h) where h = (i*K)modN, if h is not already a member of H and O(i) = S(h) where h = (i*K)modN + 1 if h is already a member of H, where h denotes a location of one of the elements in the source sequence, H denotes a set of one or more computed h values, N is a number of the elements in the source sequence to be interleaved and is a whole number greater than 4, i denotes a location of one of the elements in the interleaved sequence, S denotes the source sequence, O the interleaved sequence and K is a whole number greater than 1 and denotes the number of elements to be skipped" as recited in claims 4 and 10; "wherein the interleaving further comprises initializing an index number BB to be 0 and then for the sequence i=1 to i=N-1, O(i) = S(h) where h = (i*K + BB)mod N and if h = BB, then add 1 to BB and add 1 to h, where the index number BB is a whole number, i denotes a location of one of the elements in the interleaved sequence, h denotes a location of one of the elements in the source sequence, N is a number of the elements in the source sequence to be interleaved, S denotes the source sequence, O denotes the interleaved sequence, and K is a whole number greater than 1 and denotes the number of elements to be skipped" as recited in claims 5 and 11; "wherein the de-interleaving further comprises initializing an index number BB to be 0 and then for the sequence i=1 to

i=N-1, D(h) = O(i) where h = (i*K + BB)mod N and if h = BB, then add 1 to BB and add 1 to h, where the index number BB is a whole number, i denotes a location of one of the elements in the interleaved sequence, h denotes a location of one of the elements in the source sequence, N is a number of the elements in the source sequence to be interleaved, O denotes the interleaved sequence, K is a whole number greater than 1 and denotes the number of elements to be skipped, and D denotes a de-interleaved sequence" as recited in claims 6 and 12; "wherein the first interleaving processing system interleaves elements of data in a source sequence so that O(i) = S(h) where h = (i*K)modN, if h is not already a member of H and O(i) = S(h) where h = (i*K)modN + 1 if h is already a member of H, where h denotes a location of one of the elements in the source sequence, H denotes a set of one or more computed h values, N is a number of the elements in the source sequence to be interleaved and is a whole number greater than 4, i denotes a location of one of the elements in the interleaved sequence, S denotes the source sequence, O the interleaved sequence, and K is a whole number greater than 1 and denotes the number of elements to be skipped" as recited in claim 16; "wherein the first interleaving processing system interleaves elements of data in a source sequence by initializing an index number BB to be 0 and then for the sequence i=1 to 1=N-1, O(i) = S(h) where h = (i*K + BB)mod N and if h = BB, then add 1 to BB and add 1 to h, where the index number BB is a whole number, i denotes a location of one of the elements in the interleaved sequence, h denotes a location of one of the elements in the source sequence, N is a number of the elements in the source sequence to be interleaved, S denotes the source sequence, O the interleaved sequence, and K is a whole number greater than 1 and denotes the number of elements to be skipped" as recited in claim 17; and "wherein the second interleaving processing system de-interleaves elements of data in a source sequence by initializing an index number BB to be 0 and then for the sequence i=1 to i=N-1, D(h) = O(i) where h = (i*K + BB)mod N and if h = BB, then add 1 to BB and add 1 to h, where the index number BB is a whole number, i denotes a location of one of the elements in the interleaved sequence, h denotes a location of one of the elements in the source sequence, N is a number of the elements in the source sequence to be interleaved, O denotes the interleaved sequence, K is a whole number greater than 1 and denotes the number of elements to be skipped, and D denotes a de-interleaved sequence" as recited in claim 18.

The Office has asserted Bessios discloses the sequence shown in FIG. 3 will have a distance of eleven, except when the sequence jumps from the end of the code to the beginning when the distance will be twelve. However, again as discussed earlier, if in

Bessios the Office is counting the distance or spacing between adjacent elements in the sequence in FIG. 3 as eleven before the sequence jumps from the end of the code to the beginning of the code, such as the distance between "1" and "12", then when the sequence jumps from the end of the code to the beginning the distance between: "90" and "3"; "91" and "4"; "92" and "5"; "93" and "6"; "94" and "7"; "95" and "8"; "96" and "9"; "97" and "10"; and "98" and "11" is thirteen, not twelve. Accordingly, the Bessios only discloses separating the originally adjacent elements by second element, a second element plus two, and by just two. Like Bessios, Sondea does not disclose or suggest the claimed separation of the originally adjacent elements in the source sequence in the interleaved sequence. Again, the separation in Bessios may result in an unacceptable loss of contiguous data in the interleaved sequence where the spacing is only by two. Accordingly, in view of the foregoing amendments and remarks, the Office is respectfully requested to reconsider and withdraw the rejection of claims 4-6, 10-12, and 16-18.

In view of all of the foregoing, Applicants submit that this case is in condition for allowance and such allowance is earnestly solicited.

Respectfully submitted,

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